

dence on account of the conquest of the country by the Sikhs, and the expulsion of the Raja of Ludákh.

At Tandee we heard of the death of Runjeet Singh; and it was currently reported that we had been sent to take possession of the country: this indeed we might easily have done, for our party mustered about one hundred people; and the natives of Lahul are so cowardly that Moorcroft relates they on one occasion, when invaded by a small party, buried their swords and fled to the more inaccessible parts of the mountains. Here we parted company on the morning of the 15th of July; the one to ascend the Bhaga river and to return to Simla by the Spiti river; and the other to follow the Chundrabhaga and to proceed through Burmawur on the Boodhil river to Chumba, and from thence to Kashmeer.

On Lightning Conductors to Powder Magazines. By W. B. O'SHAUGHNESSY, M. D. Assistant Surgeon, Bengal Medical Service.

The paper now published by Prof. O'Shaughnessy is in continuation of his paper on Lightning Conductors, which appeared in No. 99 of this Journal. The positions contained in that former essay having been arraigned in a contemporary publication,* the Professor put forth a rejoinder to the exceptions taken against his views and statements by the writers above alluded to, and then placed his rejoinder in my hands for publication in this Journal, as a necessary sequel to his original essay. The circumstances under which the paper now published was written, give it of necessity a certain controversial tone, which I have felt myself bound to account for, while laying before my readers a paper, without which the essay on Lightning Conductors, already in their hands, would be incomplete.



To the Editor of the Calcutta Journal of Natural History, &c.

Illness and absence from Calcutta have prevented my sending an earlier notice of the article which has appeared in your last number relative to the attachment of lightning rods to Powder Magazines.

The only point in the article in question, which I feel myself called upon to notice in your pages, is the attempt of your correspondent to shew that I had falsely described the spear-head of the Britannia on

* Dr. M'Clelland's Quarterly "Journal of Natural History."

Government House, as having been partially fused by lightning, on the occasion of the building being struck on the 29th of March 1838. Your anonymous correspondent accuses me of such shameful falsehood, on grounds which I shall take up in the order he gives them.

1st. That he examined the identical piece of iron, which he states now forms the point of the spear on the Britannia, and that he could observe no evidence of fusion.

As the marks of fusion I saw and described, were not larger than the size of a grain of duck shot or a small pea, and as the iron (supposing the piece to be identical, which I shall presently shew strong reason for doubting) must have been exposed to the weather for two years and ten months, an impartial writer should rather have concluded that the marks had been effaced by the exposure, than that I had stated what was untrue.

Accordingly your correspondent asserts, *secondly*, that he obtained testimony of the individual by whom the repairs were executed; who gave negative evidence to any alteration having been made in the point.

In justice to myself, I am bound to protest against such evidence being for one moment attended to—"Anonymous" No. 1, charges me with falsehood, and adduces the testimony of "Anonymous" No. 2, to corroborate his case—and this in a simple matter of fact. *Opinions* or arguments are as strong in every respect, though expressed anonymously as when authenticated by the writer's name. But on questions of *facts*, personal testimony must ever preponderate. Why does not your correspondent come forward in his own name? His papers are highly creditable to his abilities, and his testimony would then be of value as to any fact he asserts.

But receiving the case on internal evidence alone, it might be that no alteration was made in the point during the repairs; it might be that the spear-head is the same as that struck, and nevertheless it is but the natural consequence of the corrosion of an iron point by the influence of climate, that the appearances I *saw* may have been entirely obliterated.

Thirdly. He accuses me of error in speaking of the spear-*head*, when I should have called it the spear-point. This is not worth rejoinder. Nothing but the mere spirit of hyper-criticism could condescend to such trifling.

Fourthly. He asserts that the lower portion of the wooden spear shews no evidence of the lightning having passed through it. Neither should it, as it never was touched.

The lightning first fell on the point, the concussion shivered the spear, and the arm of the statue; from the point it struck the copper of the dome, and thence by three divisions it entered the house, as described in the accompanying report.

Fifthly. The writer states, "there is no evidence of a direct or lateral discharge on the spikes with which the head of the figure is covered." These may or may not have been affected, there was no examination made of the spikes at the time, as I had no fancy to climbing the scaffolding for the purpose, and as far as their having been struck or not affects the question of the point, those who know the freaks and antics which lightning displays in its course, will readily admit that one metallic point may be struck close to another, without this being interfered with in the least degree.

Lastly. He dwells emphatically on the circumstance that neither Captain Fitzgerald nor his Assistant Mr. Barnes, the overseer, have in any way publicly confirmed my statement, although they are both in Calcutta, and could have been appealed to.

On this I have to observe, that the writer is (perhaps better than any other person) aware of circumstances which rendered it difficult for me to appeal to Capt. Fitzgerald or Mr. Barnes on this subject—nor did I then, nor do I now, feel the necessity of such an appeal. I described what I saw. My character for veracity must stand or fall by the correctness of my statement; had the gentleman alluded to, or his assistant publicly contradicted me, it would still be a question with every impartial man, which statement was to be believed implicitly; and most observers would probably conclude, that it was more likely that the marks of fusion I described had escaped the attention of these individuals, than that I had wilfully and falsely described that which had no existence.

I contend, too, that it can never be admitted that a writer's statements are invalidated in the least degree by the silence of any persons he refers to. The writer cannot force these persons forward in his defence, and many reasons may exist, too deep for the world to penetrate, and too powerful to allow the parties to act with perfect candour,

towards one with whom they may have been placed in disagreeable relations. I speak of course generally, and solely with reference to the hardship of being expected to force forward the testimony referred to.

Throughout his remarks, the writer attaches much more importance to the question of the spear-point being struck or fused, than it in reality deserves; but as he admits, (p. 492, last paragraph) that had it been so struck, the fact would have been "fatal to his pre-conceived opinion as to the course of the lightning on that occasion," I am warranted in adducing some further evidence in support of my statement.

On the morning after the accident, I was invited by Captain Fitzgerald to visit Government House, and offer him suggestions as to the repairs required, and the re-arrangement of the conductors. I went there in the evening and met Mr. Barnes, who shewed me the broken articles, and the course of the explosion. Captain Fitzgerald I now recollect was not present on that occasion. I wrote to Captain Fitzgerald next day, and among other suggestions I especially dwelt on the necessity of replacing the wooden spear by one of metal, connecting this with the copper of the dome, and this lastly by metallic straps, with four additional conductors to be erected adjacent to the dome. Captain Fitzgerald's report, hereunto annexed, shews that my suggestions were carried into effect. On this I have here one remark to make. If this report be correct, if my suggestions have been followed, if the metal spear has been erected, what becomes of your correspondent's assertions that the identical point has been replaced, and that he has re-examined the lower part of the original spear. If, on the other hand, the wooden spear has been replaced as it originally stood, then every impartial electrician will admit,* that the Government House of Calcutta will in all probability be again, and at no distant period, the scene of a similar casualty to that of the 29th of March, 1838. In this case it is in truth provided with a snare for every thunder-cloud that passes.

With reference to my plans, before the writer censures these he should in fairness clearly and fully state what they are. This he does not do, and for such a statement I refer to the Journal of the Asiatic Society for 1839, in which my papers are published. If the Editor

* As Captain Fitzgerald does indirectly in his report.—W. B. O'S.

of the "Calcutta Journal of Natural History," desires to be impartial, I claim from him the circulation of these papers to his subscribers, with additional notes with which I will supply him with pleasure, as *extra limites* to his Journal. All expenses of printing, postage, &c. I will cheerfully defray. His subscribers will then see that I have never opposed the attachment of conductors to Powder Magazines—that I freely admitted their value, but contended that under such peculiar circumstances, they should be erected in a greater number than Mr. Daniell recommended, and at a certain distance from the Magazine.

In conclusion, I have to acknowledge the kind exhortation of your correspondent that I should conduct this discussion with moderation, and that I should refrain from indulging in a spirit of injustice to Mr. M'Clelland and himself. All this is very amiable in gentlemen who are endeavouring to fix upon me an imputation of falsehood, and who would hide from the world, that in consequence of the Griffith and Wallich controversy, and of another public occurrence of some celebrity, I have not for some time had the happiness of being numbered among the friends of my commentators on this occasion. The remembrances of past collisions has never yet mingled honey with a critic's ink, the strongest impulse of nature would, on the contrary, urge him to dip his pen by preference in gall or acid. How far this feeling has operated on the present occasion, those who know the relative positions of the parties can readily conclude; to others I shall commit my arguments and facts, (if Dr. M'Clelland will allow me to do so) in the confidence that they will be dispassionately considered, and in the feeling that if I fail, there is no disgrace in being worsted in a controversy with an antagonist of Mr. Daniell's deserved reputation.

I am Sir, with much respect,

CALCUTTA,
1st March, 1841.

Your obedient servant,
W. B. O'SHAUGHNESSY, M. D.
Assistant Surgeon.

Report by Captain FITZGERALD on the accident by Lightning to Government House, Calcutta.

TO CAPTAIN SANDERS,

No. 563.

Secretary, Military Board.

SIR,

I have the honor to report for the information of the Military Board, that the Government House was struck by lightning during the storm which occurred early this morning. The lightning seems to have been attracted to the building by the iron at the point of the spear attached to the figure of Britannia on the top of the dome; after demolishing the spear, it pursued its course down the external copper of the dome, without apparently doing any injury, and forced its way into the ball room in three separate places. It has left its traces on the ceiling and wall of the southern division of the room, where it has injured one of the pier-glasses, and then passed out at the adjoining window. Again, on the eastern side of the central division it has pursued a similar course, injuring a pier-glass, and again passing out of the adjoining windows. On the western side of the central division it has done the most injury, for after passing through the ceiling it has broken one of the pier-glasses at its corner, then running down into the marble hall, has escaped out of one of the windows, breaking in its exit, as the others also did, several panes of glass.

2nd. I requested Dr. O'Shaughnessy to inspect the effects of the lightning, and he has expressed his surprize that so little comparative injury has been caused by it. The sharp point of iron at the end of the spear, and the studding of the shoulders of the statue with iron nails (intended to prevent birds from sitting on it) has served in the first instance to attract the lightning, and that it has never been struck before, he attributes to the protecting power of the four conductors, which, however, he considers to be twice as far from each other as they ought to be.

3rd. In repairing the statue, he recommends that the spear should be made of metal, and that it should be connected with one or more of the corner conductors by means of a continuous metallic rod. It would perhaps also be advisable, under the circumstances above men-

tioned, to affix four more conductors to the house, to render it more secure from a similar visitation.

4th. With the Board's permission, I will, in rectifying the damage, carry the improvements above suggested into effect.

I have, &c.

(Signed) W. R. FITZGERALD,

FORT WILLIAM,
30th March, 1838.

Civil Architect.

Memorandum on the Trade between the Towns of Shikarpore and Candahar.—By Lieut. J. POSTANS, Assistant Political Agent, Shikarpore, Sindh.

As it is of importance in connection with the prospects of trade with the countries bordering on, or accessible by means of the river Indus, to ascertain what return commodities may be looked from these quarters, their value and quality as suitable to the European market, I have availed myself of the arrival of the annual Kuffillahs at Shikarpore from Candahar, to obtain the following information on the various articles composing the investments from the latter place, shewing the return trade for English piece goods, metals, groceries, &c. transmitted from the former.

I have ascertained, from good authority, that the market at Candahar for European fabrics of the usual manufactures suitable to the habits and tastes of the people of these countries, is at present unusually brisk, and the demand far greater than the supply; moreover, that there is every reason to believe from the increase of security to the merchant, decrease of transit dues, impulse lately given to Candahar as a mart for the N. W., and the influx of population, that this demand will not be likely materially to decline. To the fabrics in demand, profits derived, and other particulars, I will refer hereafter.

The insecure state of the Bolan Pass, has this year retarded the arrival of the Caravans, and decreased their number. I shall quote the following list of articles received by one:—

No. 1.—*Turquoise Earth*—mds. 14—price from four rupees to twelve rupees per lb. This article is an important one in the trade to